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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/708,657	11/09/2000	Hiroshi Yokogawa	199620US0X	3153

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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER
YUN, JURIE

ART UNIT	PAPER NUMBER
2882	

DATE MAILED: 01/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/708,657	YOKOGAWA ET AL.	
	Examiner	Art Unit	
	Jurie Yun	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 March 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,5,7,12,13,16,17,19 and 20* is/are rejected.

7)☒ Claim(s) *2-4,6,8-11,14,15 and 18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 November 2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5,7*.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 1-20, drawn to a substrate for a light emitting device, classified in class 313, subclass 509.

   II. Claims 21-22, drawn to a process for the production of a light emitting device, classified in class 427, subclass 226.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, in producing the light emitting device, silicon carboxylate could be used instead of an alkoxysilane solution on the glass plate.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Frederick Vastine on 1/7/03 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-20. Affirmation of this election must be made by applicant in replying to this Office action. Claims 21 and 22 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Drawings

6. Figures 11 and 12 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

7. Claim 12 is objected to because of the following informalities: the term "which comprises a luminous" is incomplete. It is assumed to be "which comprises a luminous layer", and has been treated as such. Appropriate correction is required.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

9. Claims 1, 5, 7, 12, 13, 16, 17, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Hora (USPN 5,936,345).

10. With respect to claim 1, Hora discloses a substrate for a light emitting device, characterized in that the substrate comprises an electrically conductive transparent film (2) which is in contact with at least one surface of a low refractive index member (4), and the low refractive index member has a refractive index greater than 1 and not greater than 1.30 (column 7, lines 26-33).

11. With respect to claim 5, Hora discloses the electrically conductive transparent film (2) is made of at least one material selected from the group consisting of indium-tin oxide, indium-zinc oxide, zinc-aluminum oxide, gold, silver, copper and chromium (column 7, lines 12-13).

12. With respect to claim 7, Hora discloses the low refractive index member (4) is in the form of a thin film (column 7, lines 26-28).

13. With respect to claim 12, Hora discloses a luminous (3) which is in contact with at least one surface of a low refractive index member (4) of which refractive index is greater than 1 and not greater than 1.30.

14. With respect to claim 13, Hora discloses a low refractive index member (4) of which refractive index is greater than 1 and not greater than 1.30 is located on a transparent member (2), and a luminous layer (3) is located on a surface of the low refractive index member in the form of the thin film.

15. With respect to claim 16, Hora discloses the transparent member (2) is a plate and preferably a glass plate (column 7, lines 13-15).

16. With respect to claim 17, Hora discloses a light emitting device characterized in that it comprises a luminous layer (3) located on a transparent member (1), and the luminous layer is made of a low refractive index member in the form of a thin film which contains particles of a luminescent material dispersed therein or which carries such particles (column 7, lines 19-21).

17. With respect to claim 19, Hora discloses the transparent member (1) is in the form of a plate and preferably in the form of a glass plate.

18. Claims 17 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Hunter et al. (USPN 4,458,177).

19. With respect to claim 17, Hunter et al. disclose a light emitting device (1) characterized in that it comprises a luminous layer (8) located on a transparent member (10), and the luminous layer is made of a low refractive index member in the form of a thin film which contains particles of a luminescent material dispersed therein or which carries such particles (column 1, lines 44-67).

20. With respect to claim 19, Hunter et al. disclose the transparent member (10) is in the form of a plate and preferably in the form of a glass plate.

21. Claims 1, 5, 7, 12, 13, 20/12, and 20/13 are rejected under 35 U.S.C. 102(b) as being anticipated by Hinotani et al. (USPN 4,654,559).

22. With respect to claim 1, Hinotani et al. disclose a substrate for a light emitting device, characterized in that the substrate comprises an electrically conductive transparent film (20) which is in contact with at least one surface of a low refractive index member (19), and the low refractive index member has a refractive index greater than 1 and not greater than 1.30 (column 4, lines 21-22).

23. With respect to claim 5, Hinotani et al. disclose the electrically conductive transparent film (20) is made of at least one material selected from the group consisting of indium-tin oxide, indium-zinc oxide, zinc-aluminum oxide, gold, silver, copper and chromium (column 4, lines 23-25).

24. With respect to claim 7, Hinotani et al. disclose the low refractive index member (19) is in the form of a thin film (column 4, lines 21-22).

25. With respect to claim 12, Hinotani et al. disclose a luminous (17) which is in contact with at least one surface of a low refractive index member (19) of which refractive index is greater than 1 and not greater than 1.30.

26. With respect to claim 13, Hinotani et al. disclose a low refractive index member (19) of which refractive index is greater than 1 and not greater than 1.30 is located on a transparent member (20), and a luminous layer (17) is located on a surface of the low refractive index member in the form of the thin film.

27. With respect to claims 20/12 and 20/13, Hinotani et al. disclose the luminous layer of the light emitting device is a PL luminous layer or a layer which emits light by means of irradiation of an electron beam (column 3, lines 56+).

Claim Rejections - 35 USC § 103

28. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

29. Claims 20/12, 20/13, and 20/17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hora (USPN 5,936,345) as applied to claims 12, 13, and 17 above.

30. With respect to claims 20/12, 20/13, and 20/17, Hora does not disclose the luminous layer of the light emitting device is a PL luminous layer or a layer which emits light by means of irradiation of an electron beam. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Hora invention and disclose the luminous layer of the light emitting device is a PL luminous layer or a layer which emits light by means of irradiation of an electron beam. It would involve a slight modification in the luminous layer/electrode structure to convert from EL to PL light emitting device.

31. Claim 20/17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter et al. (USPN 4,458,177) as applied to claim 17 above.

32. With respect to claim 20/17, Hunter et al. do not disclose the luminous layer of the light emitting device is a PL luminous layer or a layer which emits light by means of

irradiation of an electron beam. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Hunter et al. invention and disclose the luminous layer of the light emitting device is a PL luminous layer or a layer which emits light by means of irradiation of an electron beam. It would involve a slight modification in the luminous layer/electrode structure to convert from EL to PL light emitting device.

Allowable Subject Matter

33. Claims 2-4, 6, 8-11, 14, 15, and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

34. The following is a statement of reasons for the indication of allowable subject matter: Prior art fails to teach the use of aerogel and/or silica aerogel as the low refractive index member in the structure of claim 1. Prior art fails to teach the low refractive index member has two surfaces which are opposed to each other, and the electrically conductive transparent film is positioned on one of those surfaces and a transparent member is positioned on the other surface, in the structure of claim 1. Prior art fails to teach the electrically conductive transparent film has the luminous layer on its one surface which is opposite to its other surface which has the low refractive index member thereon, in the structure of claim 1.

Conclusion

35. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Gnade et al. (USPN 5,525,857) and Wallace et al. (USPN 5,689,151) disclose the use of aerogel/silica aerogel.

36. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jurie Yun whose telephone number is 703 308-3535. The examiner can normally be reached on Monday-Friday 8:30-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 703 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are 703 308-7722 for regular communications and 703 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0956.

Jurie Yun
January 15, 2003

ROBERT H. KIM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800